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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,685	04/16/2004	Suning Wang	2002-033-03US	8860

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EXAMINER
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YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/825,685

Applicant(s)

WANG ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-39 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7, 10 and 19-22, drawn to a compound, classified in various classes and subclasses, dependent upon the specific formula for the compound. For example, a compound of formula (1) in which each of  $X^1-X^4$  is nitrogen and Z is anthryl, as in compounds (2) and (3) of claims 10, 19 and 20, is classified in class 546, subclass 62, whereas a compound of formula (1) in which each of  $X^1-X^4$  is carbon and Z is anthryl is classified in class 585, subclass 27.
- II. Claims 8 and 9, drawn to a method of synthesizing a compound, classified in class 546, subclass 62 (if "PhenIm" is limited to compounds of formula (1) in which each of  $X^1-X^4$  is nitrogen).
- III. Claims 11 and 12, drawn to a composition, classified in class 252, subclass 301.35.
- IV. Claims 13-15, 17, 18 and 32-39, drawn to products/devices, classified in various classes and subclasses dependent upon the specific device. For example, an electroluminescent device is classified in class 313, subclass 504, whereas a solar cell is classified in class 136, subclass 263.
- V. Claim 16, drawn to a method of producing electroluminescence, classified in class 313, subclass 504.
- VI. Claims 23 and 24, drawn to a method of detecting metal ions, classified in class 436, subclass 73.

- VII. Claim 25, drawn to a method of detecting acid, classified in class 436, subclass various (dependent upon acid(s) being tested for).
- VIII. Claims 26-31, drawn to a method of harvesting photons (claims 26-28) and a method of separating charges (claims 29-31), classified in various classes and subclasses dependent upon how the harvested photons or separated charges are ultimately used.

Inventions of Group II and Group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by a materially different process in which a brominated derivative of Z is reacted with an appropriate intermediate containing the ring structure of four fused rings required by formula (1). Also, presuming “PhenIm” is limited to compounds of formula (1) in which each of  $X^1$ - $X^4$  is nitrogen, the invention of Group II as claimed is incapable of making the full scope of the invention of Group I as claimed.

Inventions of Group I and Groups V-VIII are related as product and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case, the product as claimed can be used in a

materially different process such methods of fraud detection in which the photoluminescent property of the product is utilized.

Inventions of Groups V-VIII are directed to related processes. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, the related processes do not overlap in scope, are not obvious variants, and have materially different modes of operation, function and effect.

Inventions of Group II and Group III are unrelated. Inventions of Group II and Groups V-VIII are unrelated. Inventions of Group III and Groups V-VIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the product of Group III is not made by the process of Group II or used in any of the processes of Groups V-VIII, and the process of Group II has a different mode of operation and different effect than any of the processes of Groups V-VIII.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Groups I and III are related as subcombination and combination. Groups I and IV are also related as subcombination and combination. The examiner will examine Groups I, III and

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IV together, if so elected, subject to an election of species with respect to the compound of formula (1) and an election of species with respect to the product/device of Group IV as set forth below.

In addition to the preceding restriction requirement, an election of species is required.

With respect to the compound of formula (1), this application contains claims directed to the following patentably distinct species: compounds provided by different combinations of carbon and nitrogen for the four X variables. For example, compounds in which each of  $X^1$ - $X^4$  is carbon are patentably distinct from compounds in which each of  $X^1$ - $X^4$  is nitrogen. Applicant is required to individually elect one of carbon or nitrogen for each of  $X^1$ ,  $X^2$ ,  $X^3$  and  $X^4$  of formula (1). The election of species with respect to the compound of formula (1) is required regardless of which invention is elected in response to the preceding restriction requirement. The species are independent or distinct because the species as defined above do not overlap in scope, i.e. are mutually exclusive.

With respect to the product/device of Group IV, this application contains claims directed to the following patentably distinct species: luminescent probe, electroluminescent device, photocopier, photovoltaic device, photoreceptor, semiconductor, and molecular switch. The species are independent or distinct because the species as defined above do not overlap in scope, i.e. are mutually exclusive.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Applicant is also required to select an ultimate species (specific compound) for the compound of formula (1) that will be used as the starting point for search and examination of the elected invention. Currently, in Group I, claims 1-3, 6 and 7 are generic with respect to the species of compound of formula (1). In Group II, no claims are generic with respect to the species of compound of formula (1). In Groups III-VIII, all claims except claim 38 are generic with respect to the species of compound of formula (1). In Group IV, no claims are generic with respect to the patentably distinct species of product/device.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

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The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

In grouping the claims for the restriction requirement, the examiner presumed that claim 24 should depend from claim 23 instead of from claim 19.

Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.



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The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY

August 11, 2006

Handwritten signature of Marie R. Yamnitzky in cursive script.

**MARIE YAMNITZKY  
PRIMARY EXAMINER**

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